

May 01, 2017

Via Email and First Class Mail

Mr. Christos Tsiamis
Remedial Project Manager – Gowanus Canal Site
Emergency and Remedial Response Division
United States Environmental Protection Agency, Region 2
290 Broadway, 20th Floor
New York, New York 10007-1866

**Subject: Monthly Progress Report No. 34
Gowanus Canal Superfund Site
Unilateral Administrative Order (UAO) Docket No. CERCLA-02-2014-2001**

Dear Mr. Tsiamis:

On behalf of the Gowanus Canal Remedial Design Group (RD Group), Geosyntec Consultants respectfully submits the March 2017 Monthly Progress Report (MPR). The MPR is a summary of actions and activities undertaken pursuant to the Administrative Order for Remedial Design executed on March 24, 2014 (the Order) for the Gowanus Canal Superfund Site. The RD Group intends to submit subsequent MPRs between the 15th day and the 30th day after the end of each month until termination of this Order, unless otherwise directed in writing by EPA.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Howard Cumberland
Project Coordinator

Attachment: March 2017 Monthly Progress Report

cc: Brian Carr, Esq., USEPA (*via email & 1 hardcopy first class mail*)
Robert Schick, Hank Willems NYSDEC (*via email & 1 hardcopy first class mail*)
Juliana Hess, CH2M (*via email*)
Gowanus Canal Remedial Design Group (*via email*)

MONTHLY PROGRESS REPORT

Gowanus Canal Superfund Site
USEPA Unilateral Administrative Order
Docket No. CERCLA 02-2014-2001

Monthly Progress Report No. 34
Reporting Period: March 2017
Submittal Date: May 01, 2017

This monthly progress report, which documents remedial design activities completed at the Gowanus Canal Superfund Site during the reporting period, is submitted to the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation pursuant to section E, paragraph 60 of the Administrative Order (Order). It has been prepared by Geosyntec on behalf of the Gowanus Canal Remedial Design Group (RD Group).

1) Work Plans, Plans, and Other Deliverables

- **Submittals**

- On March 1, 2017 the RD Group provided several submittal items including:
 - The Microsoft (MS) Project file of the Turning Basin 4 (TB4) Design/Construction Schedule as requested by EPA in the February 23, 2017 workshop; and,
 - Drawings and specifications related to the TB4 50% Design, consistent with the TB4 Design/Construction Schedule provided to EPA on February 28, 2017.
- On March 3, 2017 the RD Group provided several submittal items including:
 - A summary of the ISS swell treatability test that was designed to investigate the reduction of swell and associated physical performance with varied ISS water:cement ratio mix designs. The focused treatability study was initiated in January 2017 and results anticipated in mid- to late-spring 2017; and,
 - Calculation packages supporting the TB4 50% Design. A tracking spreadsheet indicating the files provided with the 50% design submittal and materials expected at the 100% design submittal was included with the submittal of the calculation packages.
- On March 14, 2017 the RD Group submitted the remainder of the TB4 50% Design documents to EPA including the Dredge Sediment and Waste Management specification, the Dredge Water Treatment System Requirements specification, the Water Treatment Equipment Sizing Estimates calculation package, and the working draft of the Statement of Work specification.
- On March 15, 2017 the RD Group submitted another version of the comparison document showing the EPA and RD Group schedules, as requested by EPA prior to a meeting scheduled with EPA on March 16, 2017.
- On March 21, 2017 the RD Group inquired the status of EPA comments of the 50% design submittals that were submitted to EPA on March 1, 2017 and March 3, 2017. Based upon the RD Group's TB4 design schedule, comments were expected from EPA on March 14, 2017. EPA provided comments on March 24, 2017, as noted below.

- On March 22, 2017 the RD Group submitted an EPA Region 2 Off-Site Rule Request Form for approximately 14.3 tons of soil, 950 gallons of groundwater, and 600 pounds of PPE and plastic for non-hazardous disposal at Clean Earth of New Jersey.
- On March 23, 2017 the RD Group submitted materials addressing action items from the February 23, 2017 workshop with EPA related to the PD-8 NAPL Mobility investigation. The submitted materials included identification codes for polygons, pie charts for polygons reflecting 300% RE status, boring logs of percent RE for all borings, plan view of Canal showing excluded polygons, table of excluded polygons, and full detail on polygon screening for migration potential.
- On March 23-24, 2017 the RD Group and EPA communicated electronically regarding the TB4 TarGOST/CPT field confirmation borings that were in the process of being collected the week of March 20, 2017. In total, EPA requested 16 borings and the RD Group collected an additional 4 borings.
- On March 28, 2017 the RD Group submitted several data deliverables including:
 - Additional PD-8 figures and boring logs as requested by EPA on March 27, 2017;
 - Results of the TB4 TarGOST/CPT borings from the week of March 20, 2017, and all TarGOST/CPT borings collected previously by the RD Group in TB4; and,
 - A memorandum regarding the structural limits of cantilevered bulkhead supports in TB4.
- **In Agency Review**
 - See attached approval status tables (Tables 1 and 2) for approval status of work elements. Yellow highlighted rows show where further coordination with EPA is required.
- **Comments or Approvals Received from EPA this Period**
 - On March 2, 2017 EPA provided authorization to proceed with two field investigations:
 - Former 5th St Turning Basin (TB5) Supplemental Investigation field work following review of the Response to EPA Comments submitted on December 23, 2016; and,
 - TB4 TarGOST confirmation borings. EPA also indicated that guidelines for defining the extent of the NAPL hot spots requiring removal would be provided once EPA's review of the PD-8 data was complete.
 - On March 6, 2017 EPA provided authorization for the RD Group to use the PD-12 groundwater models to support performing predictive simulations of the remedy. The EPA stated that a formal approval of the model(s) will be granted by EPA after the RD Group provides modelling files and incorporates EPA comments on the comprehensive model report that will be included with the 65% Remedial Design submittal. Additionally, comments were provided that did not require formal responses from the RD Group.

- On March 10, 2017 in response to email communication from the RD Group detailing ISS swell treatability testing, EPA directed the RD Group to terminate all ISS swell treatability testing. The EPA stated that the implementation of ISS must be designed in accordance with the results of EPA's pilot study, and that issues related to meeting elevation requirements due to ISS swell will be resolved by an alternative approach to be detailed in a future directive.
- On March 13, 2017 EPA issued a directive for proceeding with bulkhead construction to support dredging during the dredging pilot study to be completed within TB4. The directive specified conceptual design details for the bulkhead supports based on current conditions of existing bulkheads. Additionally, EPA specified that the directive will serve as a guideline for the RTA1 bulkhead designs.
- On March 23, 2017 EPA provided confirmation of 3 additional TarGOST/CPT borings to be advanced within TB4, based on results from 13 previous borings in the week.
- On March 24, 2017 EPA provided comments of the 50% Design Report for the TB4 pilot study. EPA directed the RD Group to provide "Follow-up Responses" to EPA comments within two weeks. Additionally, EPA requested an all-inclusive TB4 bulkhead package, including design drawings, calculations, and specifications, to be submitted to EPA by April 10, 2017 and the project to be ready for bid solicitation prior to April 30, 2017.
- On March 27, 2017 EPA requested TarGOST data representation for 244% RE threshold for borings advanced in RTA1 and TB4 as previously completed for the 300% RE threshold.

2) Field Activities

- As part of the TB5 investigation, water levels were measured at TB5 monitoring wells during low and high tides. DNAPL was observed from a depth of 38.5 ft to 39.5 ft at MW-39I. A sample was collected and submitted to the laboratory for all target analyses, including TPH (C6 through C40) via EPA Method 8015D, VOCs via 8260C, SVOCs via 8270D, PCBs via 8082A, Metals via 6010C/7470A, viscosity, interface tension, and density. No NAPL was detected in any of the other TB5 monitoring wells using both the interface probe and Kolor-kut® gauging paste.
- TarGOST/CPT borings as requested by EPA were advanced to confirm the boundaries of EPA-identified hot-spots in TB4.

3) Data/Results Received and/or Generated

- TarGOST/CPT boring logs from PD-8 NAPL Mobility Investigation program were under review and/or validation.

4) Health & Safety Update

- No health and safety incidents or updates occurred during this reporting period.

5) Problems Encountered/Efforts to Mitigate Delays

- Due to barge unavailability and additional shipment time required by Dakota and ConeTec, the TB4 TarGOST/CPT investigation was delayed one week from a start date of March 13, 2017 to March 20, 2017. No changes were made to the RD Group schedule as a result of the delay.

6) Schedule Deviations

- The design schedule for the TB4 Pilot Study was provided to EPA on November 30, 2016 and included several critical path TB4 design elements requiring EPA decisions. EPA decisions were scheduled to be provided by December 27, 2016 according to the submitted schedule. Final determinations on TB4 design elements were not provided by EPA until February 1, 2017. The deviation has been incorporated into the revised TB4 Pilot Study Design and Construction schedule submitted by the RD Group on February 28, 2017.
- Updated RTA1 schedule materials have been provided to EPA on February 28, 2017 and on March 15, 2017.

7) Planned April 2017 Activities

- As part of site staging activities, electrical hook-ups to on-site trailers will be completed.
- Surveying of the staging site and other notable features of TB4 will be conducted to inform TB4 100% design drawings.

8) Access Coordination

- RD Group legal representatives held conference calls with EPA legal counsel regarding:
 - Potential dock relocation and possible access needs at 230 Huntington
 - Bulkhead information at 163 6th Street
- The RD Group is coordinating with remaining utilities to request information.
- A FOIL request for geotechnical information at certain properties in RTA 2 was returned by NYC Buildings; unfortunately, the DOB file version is not legible. The RD Group will attempt to obtain the information from the property owner.
- **Access agreements were previously obtained at the following properties:**
 - 270 Nevins Street (425-1) (RTA1) (270 Nevins St. Properties LLC)
 - 242 Nevins Street (418-1) (RTA1) (242 Nevins St. Inc.)
 - 226 Nevins St. (411-24) (RTA1) (226 Nevins St. Corp.)
 - 525 Union Street (432-15) (RTA1) (Sackett River Corporation)
 - 68 5th Street (471-100) (RTA2) (Housing Preservation)
 - 459 Smith Street (471-200) (RTA2) (Vichar, Inc.)
 - 65 6th Street (990-138) (RTA2) (Keyspan Energy)
 - 76 6th St. (990-369) (RTA2) (SAG LLC)
 - 42 2nd Ave. (990-269) (RTA2) (CF [or C&F] Second Ave LLC)
 - 58 2nd Ave. (990-69) (RTA2) (CF [or C&F] Second Ave LLC)

- 479 DeGraw St. (417-21) (RTA1) (Eponymous Gowanus, LLC; 3911 Lemmon Ave Assoc; Esbond Realty, LLC)
 - 37 9th Street (990-50) (RTA2) (Gowanus Holdings, LLC)
 - 386 3rd Avenue (979-5) (RTA2) (386 3rd Avenue Partners)
 - 22 2nd Ave. (990-1) (RTA2) (Richard Ribellino) – Signed through EPA
 - 141 (or 173 on tax maps) 6th St. (979-23) (RTA2) (Maritime Estates Inc.)
 - 163 6th St. (979-18) (RTA2) (Petros Realty Corporation)
 - 160 3rd St. (466-19) (RTA2) (Empire Transit Mix)
 - 450 Union St. (438-7) (RTA1) (450 Union LLC)
 - Gowanus Canal (1025-1) (RTA2) (Hamilton Plaza Associates)
 - 12th St. (1025-18) (RTA2) (Hamilton Plaza Associates)
 - 1 12th St. Extension (1007-172) (RTA2) (Hamilton Plaza Associates)
 - 1 11th St. (1007-1) (RTA2) (Lowes)
 - 176 3rd St. (978-32) (RTA2) (Whole Foods)
 - 186 3rd St. (978-30) (RTA2) (Whole Foods)
 - 190 3rd St. (978-23) (RTA2) (Whole Foods)
 - 212 3rd Street (978-16) (RTA2) (Whole Foods Market Group Inc.)
 - 75 20th St. (635-13) (RTA3) (601 Sunset Owner, LLC)
 - 420 Carroll St. (453-1) (RTA1) (Carroll St. Holding)
 - 430 Carroll St. (453-21) (RTA1) (Carroll St. Holding)
 - 318 Nevins St. (439-1) (RTA1) (Nevins St. Holding)
 - 15 2nd Ave. (979-31) (RTA2) (15 2nd Ave.)
 - 213 6th St. (980-95) (former 5th St. TB) (U-Haul Intl. Inc.)
 - 167 6th St. (979-14) (RTA2) (Dykes Lumber Co Inc.)
 - 691 Court St. (496-50) (RTA3) (Buckeyes Terminals, LLC) – Access obtained for PD-7 related tasks.
 - 726 Court St. (621-136) (RTA3) (Buckeyes Terminals, LLC) – Access obtained for PD-7 related tasks.
 - 175 Van Dyke Street (595-250) (off the Canal) (175 Van Dyke LLC) – Short-term use of boat ramp
- **Access agreements have been delivered to the following properties:**
 - 595 Smith St. (489-1) (RTA3) (Red Hook Developers Holdings, LLC and CF Smith, LLC) – The RD is coordinating with the EPA to directly reach out to the property.
 - 611 Smith St. (491-1) (RTA3) (Red Hook Developers Holdings, LLC and CF Smith, LLC)
 - 627 Smith St. (493-1) (RTA3) (Red Hook Developers Holdings, LLC and CF Smith, LLC)
 - 659 Smith St. (495-1) (RTA3) (Red Hook Developers Holdings, LLC and CF Smith, LLC)

- 691 Court St. (496-50) (RTA3) (Buckeyes Terminals, LLC) – The RD Group has obtained access for PD-7 related activities and is coordinating to obtain access for other activities.
- Gowanus Canal (624-100) (RTA3) (Buckeye Terminals)
- 764 Court St. (496-1) (RTA3) (Buckeye Terminals)
- 764 Court St. (624-1) (RTA3) (Buckeye Terminals)
- 413 Bond St. (466, 17) (RTA2) (413 Bond Street LLC) – The RD Group is coordinating with the Dillenbergers.
- **Phone conversations or initial meetings have taken place at the following properties:**
 - 381 Smith St. (483-1) (RTA2) (381 Hamilton Ave Corp – Ferrara Brothers)
 - 551 Smith St. (483-11) (RTA2) (381 Hamilton Ave Corp – Ferrara Brothers)
 - 543 Smith St. (483-20) (RTA2) (539 Smith St. Realty Corp. /Benson Scrap Metal)
 - 230/232 3rd Street (formerly American Can)
- **Coordination with NYC is required/has been sought at the following properties:**
 - Butler St. (411-14) (RTA1) (NYCDEP)
 - 2nd St.
 - 1st St. (east)
 - Former 1st St. Basin (west)
 - President St.
 - Sackett St.
 - Degraw St. (West)
 - Douglass St.
 - Bond St.
 - 2 2nd Ave. (977-3) (RTA2) (Sanitation)
 - Huntington St.
 - 2nd Ave.
 - Creamer St.
 - Smith St.
 - End of 19th St.
 - Union St. Bridge (NYCDOT)
 - Carroll St. Bridge (NYCDOT) and associated part of the bridge on 400 Carroll St. (452-15).
 - 3rd St. Bridge (NYCDOT)
 - 9th St. Bridge (NYCDOT)
 - Hamilton Ave. Bridge (NYCDOT)
 - 448 (or 488 on tax lot map) Hamilton Ave. (625-2) (RTA3) (NYCDOT)
 - 19th St. (625-250) (RTA3) (Sanitation)
 - Smith St. (477-1) (RTA2) (Red Hook Concrete LOA) (leased by Red Hook Concrete LOA)
- **EPA assistance is required and/or has been sought at the following properties:**
 - 319 Bond St. (438-3) (RTA1) (426 President St.)

- 426 President St. (445-20) (RTA1) (426 President St.)
- 383 Carroll St. (445-11) (RTA1) (383 Carroll St., LLC)
- 107 6th St. (990-151) (RTA2) (107 6th St., LLC)
- 107 6th St. (990-153) (RTA2) (107 6th St., LLC)
- 110 5th St. (977-1) (RTA2) (110 5th St. Priv.)
- 110 5th St. (990-21) (RTA2) (110 5th St. Priv.)
- 122 5th St. (990-16) (RTA2) (110 5th St. Priv.)
- 107 6th St. (990-117) (RTA2) (107 6th St., LLC)
- 36 2nd Avenue (990-160) (RTA2) (36-2nd-J Corp)
- 593 Smith St. (487-1) (RTA3) (Mulerman-Aleksey)
- 230 Huntington St. (477-8) (RTA2) (Red Hook Concrete LOA)

9) Meetings and Conference Calls

- A workshop was held between members of the RD Group and EPA on March 16, 2017.

TABLE 1
DESIGN WORK PLAN APPROVAL REQUEST TABLE

Status as of April 20, 2017

Gowanus Canal Superfund Site
Brooklyn, New York

Document	Individual Work Element	Correspondence Status	Approval Status	Date of EPA Action
Gowanus Canal Pre-Design Work Plan (PDWP)	PD-1: Quality Assurance Project Plan/Field Sampling Plan	Phone call between Geosyntec and EPA on 10/09/2014 to discuss QAPP	Approved on a task-specific basis. EPA requested task-specific QAPP documents rather than one QAPP that addresses all the PDs for review facilitation purposes.	10/09/14
	PD-2: Health and Safety Plan	Phone call between Geosyntec and EPA on 10/09/2014 to discuss HASP	Not subject to EPA approval per EPA direction.	10/09/2014
	PD-3: Additional Debris Reconnaissance for Debris Removal	All comments addressed by RD Group	Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element.	09/26/2014
	PD-4: Plan for Debris Removal, Decontamination	All comments addressed by RD Group	Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element.	09/26/2014
	PD-5: Detailed Survey and Assessment of Existing Bulkheads for Remedy Implementation	All comments addressed by RD Group	Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element. See Detailed Work Plan section for further developments.	09/26/2014
	PD-6: Plan for Staging Site Selection and Implementation	No comments received from EPA on this work section	Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element. See Detailed Work Plan section for further developments.	09/26/2014
	PD-7: Evaluation of Potential Groundwater Upwelling Areas and Measurement of Discharge	All comments addressed by RD Group	Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element. See Detailed Work Plan section for further developments.	09/26/2014
	PD-8: Evaluation of Potentially Mobile NAPL in Native Sediments	RD Group received conditional approval of PD-8 and additional comments from EPA on November 6, 2014. Written and verbal comments from EPA has been received after November 6, including on 12/16/14 regarding EPA's request for RD Group to conduct ISS investigation work as developed by EPA/CH2M Hill.	Conditionally Approved. Final PDWP document submitted 09/02/14 incorporating EPA comments on this work element. See comments on scope changes under Detailed PD-8 Work Plan.	12/16/2014
PDWP Attachment B	PD-9: Additional Sampling for Polychlorinated Biphenyls	RD Group responded on 09/09/2014 to EPA comments. On 11/17/14 EPA clarified that they do not assign a high priority to this task at this stage. At 11/20/14 workshop agreement was reached that PD-9 sampling scope will be defined and submitted to EPA for approval. At 02/19/14 workshop it was verbally directed by EPA that PD-9 be removed from the RTA1 schedule and sampling efforts be focused on high PCB concentrations in the 7th Street turning basin. RD Group has removed the work scope from the RTA1 Schedule provided on 04/08/15.	Removed from Work Scope.	02/19/2015
	PD-10: Stabilized Material Use and Treatability Testing	EPA comments received on 11/17/14 request combining PD-10 with PD-21 and (re) submitted in a single work plan. RD Group agreed with the combination of the work elements in the Response to EPA Comments submitted on 09/09/2014 and during the 20 November 2014 Workshop. Work elements PD-10 and PD-21 combined in PDWP Attachment B Partial Final submitted to EPA on 02/13/15.	Approval from EPA on 02/23/15 based on RD Group submission of PDWP Attachment B Partial Final on 02/13/15. See Detailed Work Plan section for further developments.	02/23/2015
	PD-11: Study of Canal Operations	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-12: Groundwater Model Update	On 11/17/14 EPA stated that they reserve comment for this task until it can be discussed at the upcoming 11/20/14 Workshop. Follow-up call between Geosyntec and CH2M Hill resulted in several action items and scope requests by CH2M Hill that are currently still being resolved. Geosyntec sent responses to scope requests to CH2M Hill on 12/11/14.	Conditionally Approved. Approval was provided for PD-12 by EPA on 02/23/15 contingent upon satisfactory incorporation of the inputs that were provided by EPA's contractor, CH2MHill and text "this work element will be revised as needed based on future refinements of the groundwater model and in consultation with EPA."	02/23/2015
	PD-13: Upland Area Evaluation of Cutoff Walls	RD Group responded on 09/09/2014 to EPA comments. Additional EPA comments expected by RD Group per EPA email on 09/26/14, but comments have not been received to date. EPA commented on 11/20/14 in workshop that EPA would provided written direction on how to proceed with task. Written direction has not yet been received. On 02/23/2015 EPA requested that PD-13 be resubmitted for the focused upland investigations around the 4th/5th Street Basin and 6th/7th Basins as discussed at the 02/19/2015 Workshop. On 08/26/15 EPA requested information related to which uplands the RD Group were planning on investigating, and to what extent, in TB4/5 and RTA1.	Not Approved. In response to EPA's request on 08/26/15, at the workshop on 09/09/15 the RD Group provided nexus packages for RTA1 and TB4/5 locations which showed select contaminant concentrations in the upland properties adjacent to the Canal. The nexus packages showing known upland sources and PRPs were provided to EPA in order for further discussion of how the potential upland sources are to be investigated and under the proper regulatory agency (EPA or DEC).	08/26/2015

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PDWP Attachment B	PD-14: Compliance Plan for Federal and State Archeological Requirements	Responses provided by RD Group to EPA comments.	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-15: Laboratory Evaluation of NAPL Mobility	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-16: Revisions to Sediment and Hydrodynamic Models	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-17: Evaluation of Active Cap Treatment Technologies	RD Group responded on 09/09/2014 to EPA comments. On 11/17/14 EPA stated that they would like to discuss the scope of the work and RD Group's responses to comments. At the 11/20/14 workshop EPA provided information on work they are conducting, but did not provide additional comments related to PD-17 scope nor approval of the general work element for RD Group to develop detailed work plans. Revision of this work element was provided in the Partial Final PDWP Attachment B submitted to EPA on 02/13/15. RD Group responded on 6/2/2015 to EPA comments. At the 05/13/15 and 06/11/15 meetings EPA indicated approval would be forthcoming.	Approved. On 6/18/15 EPA provided approval for thePD-17 Work Plan scope excerpt submitted on 6/2/15 contingent upon the summary of PD-17 communications being appended to the PD-17 Work Plan scope, and preparation and addition of a table specifying the work element under which the data mentioned in the revised “summary of communications of PD-17” document will be collected. The revised PDWP Attachment B was provided, compliant EPA's requests, on 6/29/15.	6/18/2015
	PD-18: Geotechnical Characterization for Cap Design	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element. See Detailed Work Plan section for further developments.	09/26/2014
	PD-19: Laboratory Evaluation of ISS Performance	RD Group responded on 09/09/2014 to EPA comments. EPA stated on 11/17/14 that they "EPA will not review any documentation on this task since it has already completed its own laboratory evaluation of the ISS and is about to conduct the ISS pilot study." EPA stated they will provide RD Group the opportunity to comment on EPA's ISS work plans and other relevant documentation. Some components of RD Group's PD-19 scope have been incorporated into EPA's Technical Plan for Pre-Pilot Investigation and ISS Pilot Testing. RD Group has removed the work scope from the RTA1 Schedule provided on 04/08/15.	Removed from Work Scope.	11/17/2014
	PD-20: Technical Workshops	On 11/17/14 EPA stated that Technical Workshops are not a remedial design element and workshops will be held on an as-needed basis. Earlier comments from EPA on PD-12, received by RD Group on 08/01/14 have requested that Technical Workshops be included in the Remedial Design schedule. Comments from EPA on PD-20 received on 08/01/14 indicate the need for several technical workshops.	Approved. Partial Final PDWP Attachment B submitted on 02/13/15 incorporating EPA comments on this work element.	2/23/2015
	PD-21: Sediment Stabilization and Treatment Technologies Treatability Studies	To be combined with PD-10. See comments under PD-10	Approved. See comments under PD-10	02/23/2015
	PD-22: Bathymetric Survey after Flushing Tunnel Operation	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	10/2/2014
	PD-23: Dredge Volume Field Study	No comments received from EPA on this work section	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-24: Propeller Wash and Cap Armoring Study	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014
	PD-25: Design CSM Refinement	RD Group responded on 09/09/2014 to EPA comments	Approved. Partial Final PDWP Attachment B submitted on 10/14/14 incorporating EPA comments on this work element.	09/26/2014

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Brooklyn, New York

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PDWP Attachment B	PD-26: Basis of Design Report	On 11/17/14 EPA stated that they prefer separate Basis of Design Reports be prepared and submitted for the individual design elements. The request was restated at the 11/20/14 technical workshop. EPA comments were incorporated into PDWP Attachment B Partial Final submitted to EPA on 02/13/15.	Conditionally Approved. Final Approval of general work scope expected from EPA with submission of Partial Final PDWP Attachment B on 02/13/15 which incorporates EPA comments. EPA stated that approval is subject to a separate Basis of Design (BOD) be developed for the 4th/5th Street Basin and RTA-1 work. EPA also requested the BOD will be updated following the data collection and analysis of the different PD elements.	02/23/2015
Remedial Design Work Plan	Introduction and Background	RD Group responded on 09/02/2014 to EPA follow up comments. Revised RDWP and Schedule submitted to EPA by RD Group on 04/08/15. EPA provided comments on 06/19/15 stating they were prepared to provide approval to the RDWP following removal of the schedule and any diagrams or references to the schedule. Resubmission of RDWP consistent with EPA comments 06/24/15.	Approved.	7/2/2015
	Bulkhead Repair or Replacement Comments			
	Excavation/Restoration of the Fifth Street Turning Basin			
	Dredging	Revised Dredging Related Activities portion of the RDWP submitted to EPA by RD Group on 06/02/15. Received comments on the Dredging Related Activities portion of the RDWP on 06/25/15.		
	Capping			
	ISS			
	Ex Situ Sediment Treatment	All comments addressed by RD Group. Revised RDWP and Schedule submitted to EPA by RD Group on 04/08/15. EPA comments on RDWP on 6/19/15 and requested resubmission for approval. Resubmission on 06/24/15.		
	Dredge Water Treatment			
	Dredging and Capping Support Site Development	No comments received from EPA on these work sections. Revised RDWP and Schedule submitted to EPA by RD Group on 04/08/15. EPA comments on RDWP on 6/19/15 and requested resubmission for approval. Resubmission on 06/24/15.		
	Source Control Action Design			
	Regulatory Requirements			
	Green Remediation			
Detailed Work Plans and QAPPs	PD-4: Debris Management Plan	Submitted to EPA on 10/30/15. Comments received from EPA on 11/19/15. Revised work plan and response to comments submitted on 12/14/15. EPA approval provided on 12/17/15.	Approved.	12/17/2015
	PD-5: Pilot Study Work Plan for Bulkhead Assessment	Submitted to EPA on 11/18/14. Comments received from EPA on 12/22/14. Response to Comments submitted on 01/12/15. Final detailed work plan submitted 01/20/15.	Approved.	01/21/2015
	PD-5: Survey and Assessment of Existing Bulkheads	Submitted draft to EPA on 02/09/15. Submitted Final Detailed Work Plan for PD-5 on 3/26/15. Submitted RLSO version and revised PD-5 work plan on 6/24/15.	Approved.	07/02/15
	PD-6: Staging Site Selection and Implementation Plan	RD Group submitted the PD-6 Staging Site Selection and Implementation Plan to EPA on 01/19/15. EPA has commented verbally that they do not plan to approve the WP since Citizens has been identified as a staging site.	Not Approved.	--
	PD-7: Evaluation of Potential Groundwater Upwelling Areas and Measurement of Discharge	Draft and Final Detailed Work Plans were submitted in October 2015.	Approved.	11/6/2014
Detailed Work Plans and QAPPs	PD-8: Evaluation of Potentially Mobile NAPL in Native Sediments	RD Group submitted Detailed Work Plan for PD-8 on 11/25/14. EPA Comments received by RD Group in November and December 2014 regarding detailed work scope. Expansion of general PD-8 work scope and schedule requested by EPA. EPA written comments received on 12/22/14. Response to EPA Comments submitted on 01/12/15. EPA provided new direction related to work element PD-8 via email on 14 January 2015, in response to information on driller and TarGOST/CPT subcontractor availability provided by RD Group on 06 January 2015. The sequence of PD-8 investigation activities was requested by EPA. RD Group agreed with the proposed sequence via email correspondence on 26 January 2015.	Conditional approval provided by EPA on 01/29/15 with need for the final version to incorporate EPA comments. Final PD-8 Detailed Work Plan submitted on 02/09/15. Comments or written approval of Final Work Plan not provided by EPA.	01/29/2015
	PD-10/21: Dredged Material Stabilization and Dewatering Treatability Study	Submitted to EPA on 3/5/15. Comments received from EPA on 3/20/15. Response to Comments and Final Work Plan submitted to EPA on 04/10/15.	Approved	5/20/2015

<div> <div>TABLE 1</div> <div>DESIGN WORK PLAN APPROVAL REQUEST TABLE</div> <div>Status as of April 20, 2017</div> <div>Gowanus Canal Superfund Site</div> <div>Brooklyn, New York</div> </div>				
Document	Individual Work Element	Correspondence Status	Approval Status	Date of EPA Action
Detailed Work Plans and QAPPs	PD-15: Laboratory Evaluation of NAPL Mobility	Submitted to EPA on 7/31/2015. EPA provided comments on 9/16/2015. The RD Group provided responses to EPA comments and Final Work Plan on 10/12/15. EPA follow-up comments provided received by the RD Group on 10/29/15. RD Group Response to follow-up comments and Final Work Plan submitted to EPA on 11/05/15. EPA approval provided on 11/19/15.	Approved	11/19/2015
	PD-17: Evaluation of Active Cap Treatment Technologies	Submitted to EPA on 7/24/2015. EPA provided comments on 9/14/2015. The RD Group provided responses to EPA comments and Final Work Plan on 10/12/15. EPA follow-up comments provided received by the RD Group on 10/29/15. RD Group Response to follow-up comments and Final Work Plan submitted to EPA on 11/05/15. EPA approval provided on 11/19/15.	Approved	11/19/2015
	PD-18: Geotechnical Characterization for Cap and Dredge Design	Submitted to EPA on 11/18/14. Comments received from EPA on 12/22/14. Response to Comments submitted on 01/12/15.	Conditional approval provided by EPA on 01/26/15 with need for final version to incorporate EPA comments. Final Version Submitted to EPA on 02/13/15. Comments or written approval of Final Work Plan not provided by EPA.	01/26/2015
	Pre-Design Investigations for 5th Street Turning Basin	RD Group submitted Work Plan on 08/27/15. EPA provided comments on 10/07/15 along with email correspondence requesting additional confirmatory borings "to characterize the extent of contamination within TB5 in order to determine the required extent of excavation of TB5." Responses to EPA Comments provided by the RD Group on 10/28/15. EPA correspondence on 11/09/15 requesting revision of the Work Plan. RD Group provided a letter to EPA on 11/16/15 requesting a combined technical/legal meeting to discuss the topic. EPA letter on 11/30/15 directing the work to be conducted. RD Group submitted revised Work Plan on 12/10/15. Comments received by EPA on 03/10/16. Directive from EPA to respond by 3/25/16. Response to comments, revised Work Plan, and QAPP submitted by RD Group on 03/25/16. Follow-up comments provided by EPA on 05/06/16 directing responses by 05/20/16. Email from EPA on 05/19/16 to allow for mobilization if Group agrees to provide comments by 05/31/16. RD Group provided revised Work Plan on 05/31/16 per EPA directive. RD Group emailed EPA on 06/15/16 inquiring about the approval status of the Work Plan with field work scheduled for the following week (06/23/16). On 06/15/16 EPA responded with additional revisions to the document and noted that the document was not yet approved. Following conversations between the RD Group and Brian Carr, alternative language was provided on 06/17/16 by Brian Carr which superseded EPA's comments on 06/15/16. The RD Group provided a revised version of the Work Plan on 06/20/16 and followed up with an email on 06/22/16 inquiring on the approval status of the Work Plan. On 06/22/16 EPA noted that revisions were not acceptable and that no work is to be performed until EPA approval is provided. The RD Group provided a revised version of the Work Plan on 6/27/2016 containing the specific language and schedule directed by EPA via email correspondence on 6/22/2016. As part of the submission of the Work Plan, a cover letter requesting a combined legal and technical meeting to further discuss the scope of work was included. On 06/27/16 the RD Group resubmitted the TB5 Work Plan. On 06/28/16 EPA provided written approval of the work.	Approved.	06/28/2016
	Supplemental Pre-Design Investigations for 5th Street Turning Basin	RD Group submitted a supplemental Work Plan for pre-design investigations at TB5 on 11/18/16 based on discussions with EPA at the technical workshop on 10/20/16. EPA comments provided on 12/13/16. RD Group Responses to EPA Comments submitted to EPA on 12/23/2016.	EPA provided apporval on 03/02/17.	03/02/2017

Note:

Conditional Approval by EPA pending resolution of issues and/or finalization of detailed work plans

Highlighted items represent tasks still requiring EPA approval

TABLE 2
INVESTIGATION AND DESIGN REPORT APPROVAL TABLE
Status as of April 20, 2017
Gowanus Canal Superfund Site
Brooklyn, New York

Document	Individual Work Element	Correspondence Status	Approval Status	Date of EPA Action
Gowanus Canal Investigation Reports	PD-7: Evaluation of Potential Groundwater Upwelling Areas and Measurement of Discharge	Investigation report submitted by RD Group to EPA on 10/15/15. Additional appendices submitted by RD Group to EPA on 11/13/15. EPA provided comments on the report on 11/19/15. RD Group provided Response to comments on 01/04/16 and requested data on 01/08/16.	Conditionally Approved. EPA provided conditional approval on 01/21/16 provided that the RD Group make the necessary revisions in the PD-7 documentation, incorporate EPA's recommendations into the methodology going forward, and submit the revised documentation acknowledging the changes. Final Report submitted by RD Group on 02/25/16	01/21/2016
	PD-5: Detailed Survey and Assessment of Existing Bulkheads for Remedy Implementation (Phase 1 Reports)	Investigation report submitted by RD Group to EPA on 11/13/15. EPA provided comments on the report on 02/12/16. RD Group submitted responses to comments and revised reports on 04/20/16. Approved by EPA on 05/05/16.	Approved on 05/05/16.	05/05/2016
	PD-5: Detailed Survey and Assessment of Existing Bulkheads for Remedy Implementation (Phase 2 Reports)	Select investigation reports for properties (Block 979 Lots 18, 23, and 31) in adjacent to TB4 submitted by RD Group to EPA on 06/02/16. Remaining Phase 2 investigation reports submitted on 06/29/16. Investigation report for the 420 Carroll Street property was submitted by the RD Group on 10/6/2016.	Awaiting EPA comments and/or approval.	--
	PD-8: NAPL Mobility	A working draft of the PD-8 NAPL mobility report was submitted by the RD Group for EPA review on 10/7/2016. Appendix A (ERT Report), Appendix H (High-Resolution Photos), and Appenix J (TestAmerica Lab Reports) were submitted by the RD Group for EPA review on 10/13/2016. Discussion of report at technical workshop on October 20, 2016. Follow-up items provided by the RD Group to EPA on 12/05/16. EPA provided general comments on the Draft PD-8 NAPL Investigation Report on December 28, 2016. EPA provided requests for revisions to PD-8 TarGOST - PFS data set model on 01/30/2017.	RD Group Responses to EPA Comments in preparation.	--
	PD-10/21: Dredged Material Stabilization and Dewatering Treatability Study	Investigation report submitted by RD Group to EPA on 6/22/16. EPA provided comments on 07/28/2016. Resubmitted by the RD Group on 09/15/16.	EPA request on 02/01/17 for additional discussion of acceptance criteria for thermal treatment and beneficial reuse. Revised document provided to EPA on 02/24/17.	2/1/2017
	PD-14: Compliance Plan for State and Federal Archaeological Requirements	Historical research on the sunken vessel in TB4 was provided by the RD Group to EPA on 03/25/16. EPA responded on 03/29/16 that the materials will be reviewed and coordinated when information is provided on other items of potential cultural significance. The RD Group uploaded historical research information on several other items in the Canal on 06/15/16. On 06/15/16 the RD Group provided materials comprising the Archaeology Compliance Plan; specifically, the Area of Potential Effect, the Cultural Resources Monitoring Plan, and the Cultural Resources Mitigation and Treatment Plan. EPA provided SHPO concurrence letter for sunken vessel in TB4 on 07/13/16 which provides SHPO concurrence that the sunken vessel is not a significant cultural resource. EPA, SHPO, and the RD Group coordinated on revisions to PD-14 materials based on comments received 07/18/16. RD Group resubmitted materials on 09/02/16.	Awaiting EPA comments and/or approval.	07/18/16
	PD-15: Laboratory Evaluation of NAPL Mobility by Ebullition	Draft PD-15 Laboratory Evaluation of NAPL Mobility by Ebullition was submitted by the RD Group to EPA for review on 10/6/2016.	EPA comments provided on 02/01/17. RD Group response to EPA comments provided on 4/18/17.	2/1/2017
	PD-17: Active Capping Treatability Study	Draft PD-17 Investigation Report was submitted by the RD Group to EPA for review on 12/22/2016.	EPA comments provided on 02/01/17. RRD Group response to EPA comments provided on 4/18/17.	2/1/2017
	PD-18: Cap and Dredge Design Geotechnical Investigation	Investigation report submitted by RD Group to EPA on 12/09/15.	Approved on 02/12/16.	2/12/2016

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Gowanus Canal Design Reports and Documents	PD-4: Plan for Debris Removal, Decontamination	Document submitted by RD Group to EPA on 10/30/15. EPA provided comments on the report on 11/19/15. RD Group submitted Response to Comments and Final Plan on 12/14/15.	Approved on 12/17/15.	12/17/2015
	RD-22: Noise and Vibration Report	Document submitted by RD Group to EPA on 11/23/15. EPA provided comments on the report on 02/12/16. RD Group submitted revised documents and response to comments on 04/12/16. Approved by EPA on 05/05/16.	Approved on 05/05/16.	05/05/2016
	Basis of Design Report Sections on Dredging, Sediment Treatment, Site Staging	Document submitted by RD Group to EPA on 1/21/16. EPA provided comments on the report on 03/10/16. RD Group submitted responses to comments and revised sections on 03/25/16. EPA follow-up comments received on 05/06/16 with responses directed to be returned by 05/27/16. On 05/27/16 the RD Group submitted the Final Basis of Design Report (BODR) documents for Sections 1-4 and Section 8 that with a Response to Comments document. EPA provided approval of Sections 1-4, 8 on 06/17/16.	Approved on 06/17/16.	06/17/2016
	Basis of Design Report Sections	<p>Documents submitted by RD Group to EPA on 04/15/16.</p> <p>EPA comments on Water Treatment, Environmental Management, and RA Schedule sections provided on 05/20/16. RD Group provided revised version of Water Treatment and Environmental Management sections on 08/02/16. The revised version of the RA Schedule section was provided by the RD Group on 9/14/16. EPA follow-up comments on Environmental Management BODR Sections 5 and 11 on 09/21/16. RD Group submitted revised version of Water Treatment BODR section on 10/5/2016.</p> <p>EPA comments on ISS section provided on 6/17/16. EPA comments on Capping section provided on 6/16/16. RD Group provided revised version of ISS section on 09/02/16. RD Group provided revised version of Capping section on 09/16/16.</p> <p>RD Group submitted Temporary Shoring BODR on 09/23/2016.</p> <p>RD Group submitted TB5 BOD on 07/12/16. EPA provided comments on the TB5 BODR on 07/29/2016. RD provided revised version of TB5 BOD to EPA on 09/16/16.</p>	No further EPA comments or approvals provided. Superseded by submission of 35% design reports on 10/31/16 (water treatment, environmental management, RA Schedule) and 12/23/16 (SS and capping).	06/29/2016
	35% Design Report Outline	Documents submitted by RD Group to EPA on 04/15/16.	No EPA comments and/or approvals provided. Superseded by submission of 35% design report on October 31, 2016.	--
	35% Design Report	<p>Rev A documents submitted by RD Group to EPA on 10/31/16, including Appendix A (Rev A Preliminary [35%] Drawings), Appendix B (Rev A Calculation Packages), Appendix C (Construction Quality Assurance Plan [CQAP]), Appendix D, and Appendix E (Pre-Design [PD] Reports). EPA comments provided on 35% design for Dredging, Water Treatment, and Sediment Treatment on 12/13/16. RD Group provided responses to EPA comments on 35% design for Dredging, Water Treatment, and Sediment Treatment on 01/04/2017.</p> <p>Rev B documents submitted by RD Group to EPA on 12/23/2016, including 35% Design Report sections on ISS and Capping along with Appendix A, (Rev B Preliminary Drawings) Appendix B (Rev B Calc packages), Appendix D, and Appendix E.</p>	<p>RD Group Reponses to EPA Comments on 35% Design for Dredging, Water Treatment, and Sediment treatment were submitted on 01/04/2017. EPA Follow-up comments were provided on 02/01/17. No further correpondence is necessary until the 65% design stage.</p> <p>EPA comments on ISS and capping sections provided on 02/01/17. RD Group Responses to EPA comments in development.</p>	02/01/17
	Site Staging and Debris Removal Permitting Packages	Documents submitted by RD Group to EPA on 08/09/2016. Approved on 09/06/16	Approved.	9/6/2016

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	TB4 Design Memoranda	Documents submitted by RD Group to EPA in November 2016, with EPA decisions on critical path items assumed for 12/27/16. Memoranda included proposals for TB4 Pilot Study lateral boundaries, dredge depth, bulkhead support approach, and schedule. Memoranda were discussed at at technical workshop between the EPA and RD Group on 12/15/16. The TB4 Pilot Study Boundary memo was revised, per discussion with EPA, and resubmitted by the RD Group on 01/05/2017. Drawings and specifications related to the TB4 50% Design Report were submitted on 3/1/2017. Calculation packages supporting the TB4 50% Design Report were submitted on 3/3/2017. The Dredge Sediment and Waste Management specification, the Dredge Water Treatment System Requirements specification, the Water Treatment Equipment Sizing Estimates calculation package, and the working draft of the Statement of Work specification were submitted on 3/14/2017. A memorandum regarding the structural limits of cantilevered bulkhead supports was submitted on 3/28/2017.	EPA comments and decisions were provided on 02/01/17 . Further determinations from EPA related to bulkheads was provided on 3/13/17 including a new provision for the bulkheads to be protective of environmental concerns stemming from tar discharge from uplands. EPA comments provided on 3/24/17 on the 50% Design Report.	3/24/2017

Note:

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Highlighted items represent tasks still requiring EPA approval